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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hiroyuki Kato

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EXAMINER

BADR, HAMID R

ART UNIT

PAPER NUMBER

1781

NOTIFICATION DATE

DELIVERY MODE

05/23/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/593,867	Applicant(s) KATO ET AL.	
	Examiner HAMID R. BADR	Art Unit 1781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/19/2011</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants' amendment filed 3/23/2011 is acknowledged.

Claims 1 and 9-10 are being considered on the merits.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gomi et al. (US 4,113,716; hereinafter R1) in view of JP 2003-023988 (Machine translation, hereinafter R2) and Hirota (JP-2002-112741; English abstract; hereinafter R3).

3. R1 discloses the production of soybean proteins isolates of high nitrogen solubility index (NSI). (co. 1, lines 50-60)

4. R1 discloses that the extracted protein undergoes a subsequent heat treatment by rapidly heating the isolated protein to a temperature of 110C-140C and retaining the protein at such temperatures for 2 seconds to 3 minutes. R1 discloses that the method of heating can be direct, by contacting the protein with steam, or indirect heating. (col. 2, lines 64 to col. 3, line 6)

5. R1 discloses that the heat treated protein has high emulsification ability and gelling performance. (Col. 4, Example 1).

Art Unit: 1781

6. R1 is silent regarding the reaction of the heat treated protein with transglutaminase.
7. R2 discloses that soybean protein material can be reacted with transglutaminase to produce soy milk. (Claims 1, 2). The process disclosed by R2 comprises mixing the soybean protein and transglutaminase and heating for the formation of the cross-linked product.
8. R2 discloses that the reaction product of transglutaminase and soybean protein will have high nutritional value, good taste and smoothness of texture. [0076]
9. R2 is silent regarding the use of soybean protein, and transglutaminase in the production of restructured foods containing meat.
10. R3 discloses the process for producing fishery paste product by combining transglutaminase and raw fish material comprising soybean protein and water. The mixture is then heated for the reaction of transglutaminase and fish and soybean proteins. The resulting restructured food material is claimed to be soft and rich in elastic texture. (English Abstract)
11. Therefore, a soybean protein solution undergone a heat treatment and reacted with transglutaminase, as disclose by R1 and R2, will have high emulsification and gelling properties together with high nutritional quality and smoothness of the gel. The use of such a functional raw material to produce restructured food material having rich and elastic texture is clearly demonstrated by R3. Therefore, the invention as presently claimed does not appear to involve an inventive step.

Art Unit: 1781

12. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to prepare a soybean protein material of high emulsification and gelling properties to be used in restructured foods with high elastic texture. Absent any evidence to the contrary and based on the combined teachings of the cited references, there would be a reasonable expectation of success to make a soy protein and use in restructured meats.

Response to Arguments

Applicants' arguments have been considered. These arguments are not deemed persuasive.

1. Applicants argue that a skilled person in the art would not feel the necessity for heating before the transglutaminase treatment and that R1 does not disclose obtaining a soybean protein that has more emulsifying ability than conventional soybean protein by a heat treatment.

a. Please see the teachings of R1 for heating a soy protein isolate for the temperature and time as presently claimed. The resulting protein isolate has improved emulsification and gelling properties.

b. R1 discloses a process for isolating a protein and heat treating it to improve the emulsifying and gelling properties of the protein material. Since the method of the protein preparation (i.e. heat treated isolate) as disclosed by R1 is identical to the method as presently claimed (i.e. heat treated soy protein), the properties of the two materials will be intrinsically the same; i.e. improve emulsifying and gelling properties.

2. Applicants argue that "powder soy milk" in R2 is not "powdered soy milk"

Art Unit: 1781

a. R2 clearly teaches of reacting soybean material containing protein with transglutaminase. Therefore, since the reaction takes place between transglutaminase and soy proteins, it would be obvious to react any soy material containing protein with transglutaminase. Therefore, the argument regarding “powder soy milk” or “powdered soy milk” appears to be irrelevant.

3. Applicants argue that R3 does not disclose or suggest a process of producing a soybean protein.

a. The process of producing a soybean protein is disclosed by R1. R3 does not have to disclose the same concept. R3 is being cited as a secondary teaching reference.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1781

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAMID R. BADR whose telephone number is (571)270-3455. The examiner can normally be reached on M-F, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence TARAZANO/
Supervisory Patent Examiner, Art Unit 1781

Hamid R Badr
Examiner
Art Unit 1781